group (p =0.056), and the 5-year actuarial grade 2+ GI toxicity rate was lower in the IMRT group than in the 3D-CRT group (5.0% vs. 12.1%, p <0.01). A lower incidence of acute genitourinary (GU) grade 2+ toxicities occurred in the IMRT group than in the 3D-CRT group (7.1% vs. 16.4%, p = 0.001). The 5-year actuarial grade 2+ GU toxicity rate for the IMRT vs. the 3D-CRT group was 16.3% vs. 21.7% (p = 0.103), respectively.

Conclusion: IMRT combined with I-125 brachytherapy in prostate cancer patients found a lower incidence of toxicities than 3D-CRT combination, without compromise of biochemical outcomes.

PO-0740

Nodal clearance rate and efficacy of individualised SN-based pelvic IMRT for prostate cancer

A. Müller[1], F. Eckert[1], F. Paulsen[1], D. Zips[1], A. Stenzl[2], D. Schilling[2], M. Alber[3], R. Bares[4], P. Martus[5], D. Weckermann[6], C. Belka[7], U. Ganswindt[8]
[1]*University Hospital Tübingen- Eberhard Karls University, Radiation Oncology, Tübingen, Germany*
[2]*University Hospital Tübingen- Eberhard Karls University, Urology, Tübingen, Germany*
[3]*Aarhus University, Oncology, Aarhus, Denmark*
[4]*University Hospital Tübingen- Eberhard Karls University, Nuclear Medicine and Clinical Molecular Imaging, Tübingen, Germany*
[5]*University Hospital Tübingen- Eberhard Karls University, Institute for Clinical Epidemiology and Applied Biometry, Tübingen, Germany*
[6]*Klinikum Augsburg, Urology, Augsburg, Germany*
[7]*University Hospital Munich- Ludwig-Maximilians-University, Radiation Oncology, Munich, Germany*
[8]*University Hospital Munich- Ludwig-Maximilians-University, Radiation Oncology, Munich, Germany*

Purpose or Objective: Studies on extended or sentinel node (SN) pelvic lymph node dissection (PLND) have shown a higher detection rate compared to standard PLND in high risk prostate cancer (HRPC). In accordance with these findings, we previously demonstrated that ~30% of SNs in HRPC-patients were detected outside of the radiotherapy volume for elective lymph node irradiation. The aim of this study was to assess efficacy of individually SN-guided pelvic intensity modulated radiotherapy (IMRT) by determining nodal clearance rate {(n expected nodal involvement – n observed regional recurrences)/ n expected nodal involvement} in comparison to surgically staged patients.

Material and Methods: Data on 475 HRPC patients were examined. Sixty-one consecutive patients received pelvic SN-based IMRT (5x1.8Gy/week to 50.4Gy (pelvic nodes+individual SN) and an integrated boost with 5x2.0Gy/week to 70.0Gy to prostate + (base of) seminal vesicles) and neo-/adjuvant long-term androgen deprivation therapy; 414 patients after SN-PLND were used to calculate the expected nodal involvement rate for the radiotherapy sample. Biochemical control and overall survival (OS) were estimated for the SN-IMRT patients using the Kaplan-Meier method. The expected frequency of nodal involvement in the radiotherapy group was estimated by imputing frequencies of node-positive patients in the surgical sample to the pattern of Gleason, PSA, and T-category in the radiotherapy sample.

Results: After a median follow-up of 61 months, five year OS after SN-guided IMRT reached 84.4%. Biochemical control according to the Phoenix definition was 73.8%. The nodal clearance rate of SN-IMRT reached 94%. The estimated nodal involvement in the SN-IMRT group was 28.6% (95%-CI:19.3%-37.7%). Retrospective follow-up evaluation is the main limitation.

Conclusion: Radiation treatment of pelvic nodes individualized by inclusion of SN is an effective regional treatment modality in HRPC patients. The pattern of relapse indicates that the SN-based target volume concept correctly covers individual pelvic nodes. Thus, this SN-based approach justifies further evaluation including current dose-escalation strategies to the prostate in a larger prospective series.

PO-0741

Even high-dose radiotherapy requires long-term androgen ablation for high-risk prostate cancer

T.K. Nam[1], D.D. Kwon[2], J.W. Jeong[1], Y.H. Kim[1], M.S. Yoon[1], J.Y. Song[1], S.J. Ahn[1], W.K. Chung[1]
[1]*Chonnam National University Medical School, Radiation Oncology, Gwangju Metropolitan, Korea Republic of*
[2]*Chonnam National University Medical School, Urology, Gwangju Metropolitan, Korea Republic of*

Purpose or Objective: Whether the benefit of androgen ablation therapy (AAT) remains currently unclear in the era of dose escalation and the recent radiation therapy oncology group trials regarding this issue are still under accrual. We tried to evaluate the role of long-term adjuvant AAT for more than 12 months after completion of high-dose intensity modulated radiotherapy (IMRT) for high-risk prostate cancer patients at the single institution retrospectively.

Material and Methods: Between 2005 and 2013, there were 177 high-risk patients treated with radical IMRT. From 2005 to 2009, 25 patients were treated by LINAC-IMRT, and since 2010, remaining 152 patients were treated by helical tomotherapy. High-risk was defined as having one or more among three factors such as pretreatment prostate specific antigen (pPSA) levels > 20 ng/ml, or Gleason score (GS) > 7, or clinical stage ≥ T3a. Ninety-four patients (53.1%) had pPSA levels > 20 ng/ml, and 91 patients (51.4%) had GS > 7. Clinical stage T3 or 4 was diagnosed in 143 patients (80.8%) and 21 (11.9%) had pelvic lymph node metastasis initially. Among all patients, 95.5% received neoadjuvant/concurrent and 91.1% had adjuvant AAT. Median fraction size was 2.2 Gy for prostate plus proximal seminal vesicles with simultaneously integrated boost during whole pelvic irradiation of 1.8 Gy fraction. Most patients (88.1%) received whole pelvic irradiation of a median of 45.0 Gy. Median total nominal dose was 72.6 Gy (66.0 ~ 78.0) which was equivalent to a median of 81.4 Gy α/ß 1.5 (74.2 ~ 86.3) in biologically effective dose of 1.8 Gy fraction. Biochemical failure (BCF) was defined as nadir plus 2 ng/ml.

Results: Follow-up period was ranged from 6 to 117 months (median: 37). Eighteen patients (10.2%) developed BCF and 5-year BCF-free survival rate (BCFFS) was 83.1%. Six out of 18 BCF patients eventually developed clinical failure and 5-year clinical failure-free survival (CFFS) was 93.7%. 5-year cause-specific survival (CSS) and overall survival (OS) was 99.1% and 95.8%, respectively. Several potential prognostic factors were analyzed for each survival endpoints by multivariate analysis. Whether adjuvant AAT or not (p=0.000) and N stage (p=0.016) were significant factors affecting BCFFS but no factors were significant for CFFS, CSS, or OS. Biologically effective dose according to 1.8 Gy ⩽80.0 Gy α/ß 1.5 vs. > 80.0 Gyα/ß 1.5) was not a significant factor in all survival endpoints. There was only one patient who suffered urethral stricture of grade 3 late toxicity. No patient suffered grade 3+ in gastrointestinal or grade 4+ in genitourinary late toxicity. s 2 ng/ml.

Conclusion: Based on BCF end point, even high-dose IMRT was an insufficient treatment for high-risk prostate cancer patients if adjuvant AAT was not added. The addition of adjuvant AAT significantly reduced the BCF, although longer follow-up is needed to determine if the combined treatment impacts significantly on other survivals

PO-0742

Image-guided IMRT reduces late toxicity compared to 3D-CRT for prostate cancer

R. Wortel[1], L. Incrocci[1], F. Pos[2], U. Van der Heide[2], J. Lebesque[2], S. Aluwini[1], M. Witte[2], W. Heemsbergen[2]
[1]*Erasmus MC Cancer Institute, Radiation Oncology, Rotterdam, The Netherlands*
[2]*Netherlands Cancer Institute, Radiation Oncology, Amsterdam, The Netherlands*